

**UNINTENDED CONSEQUENCES OF NEGATIVE MESSAGES: WHY SOME
HEALTH INTERVENTIONS MISS THE MARK**

A Thesis

by

JILL ELIZABETH BURPO

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2007

Major Subject: Psychology

**UNINTENDED CONSEQUENCES OF NEGATIVE MESSAGES: WHY SOME
HEALTH INTERVENTIONS MISS THE MARK**

A Thesis

by

JILL ELIZABETH BURPO

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Approved by:

Chair of Committee, Hart Blanton
Committee Members, Brandon J. Schmeichel
Michael T. Stephenson
Head of Department, Les Morey

May 2007

Major Subject: Psychology

ABSTRACT

Unintended Consequences of Negative Messages:

Why Some Health Interventions Miss the Mark. (May 2007)

Jill Elizabeth Burpo, B.A., Newcomb College

Chair of Advisory Committee: Dr. Hart Blanton

The debate about how to frame health messages to maximize their effectiveness is ongoing. Research supports the use of both positive and negative frames under different conditions. This project was developed to further clarify the circumstances under which a negative frame may be harmful, or even backfire. In Study 1 it was proposed that past drinking behavior would moderate the relationship between message frame and behavioral intention to drink alcohol in the future such that people with a heavy drinking past would react to a negatively framed message by increasing their intention to consume alcohol. A total of 212 students participated in the study where they completed a questionnaire to provide information on some of the key variables, such as drinking history, and then were asked to read mock health materials with either a positive or negative frame. They concluded the study by responding to a final questionnaire where they provided feedback on the health materials and indicated their intentions to drink in the future. Results of this study supported the hypothesis. The goals of Study 2 were to replicate the findings of Study 1 and to test the hypothesis that self-esteem would be a second-order moderator of this effect such that people with a heavy drinking past and high self-esteem would be most likely to respond to a negatively framed message by increasing their intention to drink alcohol in the future. A total of

490 students participated in the study, which followed the same procedure as the first study. Results of Study 2 failed to replicate the findings from Study 1, and indicated that self-esteem did influence the relationship between past behavior, message frame and behavioral intention but not in the proposed direction. The marginally-significant effect found in Study 2 suggested that heavy drinkers with high self-esteem were actually more likely to decrease their intentions to drink alcohol after reading a negatively framed message. Because of the inconsistency in the results of the two studies presented, proposed directions for future research are discussed.

DEDICATION

To Steve, for standing beside me and helping me laugh along the way.

To Elizabeth, for providing a home away from home.

To my family and friends, for their support.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
DEDICATION.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES.....	vii
INTRODUCTION.....	1
Background.....	1
The Case for Going Negative.....	3
Past Behavior: Experience Changes the Picture.....	5
Self-Esteem: More Is Not Always Better.....	8
STUDY 1.....	11
Participants and Design.....	11
Procedure.....	12
Focal Variables.....	12
Results.....	16
Discussion.....	23
STUDY 2.....	26
Participants and Design.....	27
Procedure.....	28
Primary Modifications.....	28
Results.....	29
Discussion.....	37
CONCLUSION: FUTURE DIRECTIONS.....	40
ENDNOTE.....	42
REFERENCES.....	43
APPENDIX A.....	50
APPENDIX B.....	65
VITA.....	89

LIST OF FIGURES

FIGURE		Page
1	Study 1: Message Frame X Past Behavior Interaction Among Four Levels of Drinking.....	20
2	Scatter Plot of Sample (Study 2).....	31
3	Study 2: Message Frame X Past Behavior X Self-Esteem Interaction.....	34

INTRODUCTION

The purpose of this paper is to examine the factors that moderate the relative effectiveness of positively versus negatively framed health communications. The focus of the current work is on health communications designed to reduce binge drinking, and the guiding hypothesis is that negative frames will be more effective at promoting healthier drinking behaviors among individuals who have not engaged in heavy drinking in the past. However, among individuals who have engaged in heavy drinking in the past, negative frames could cause a “backlash effect” such that they actually respond to healthy drinking communications by drinking more. I predict that this undesired effect of negative message frames will be most prevalent among individuals who are high in self-esteem.

Background

Persuasive health messages can be framed either positively or negatively, and the kind of frame that is recommended may be altered according to the situation and audience. A positively-framed message is one that promotes the positive aspect of a desired behavior. For example, a positive message about drinking in moderation would suggest that refraining from heavy drinking has positive health and social consequences. Conversely, a negatively framed message is one that promotes the negative aspect of an undesired behavior. In this case, a negative message about heavy drinking would hone in on the idea that excessive drinking has negative health and social consequences.

This thesis follows the style of *Journal of Personality and Social Psychology*.

Although the negative frame can be effective in some cases, it can also be something of a double-edged sword: Some audience members might be well-positioned to receive a negative message about a specific behavior, such as heavy drinking, whereas others could interpret the same message as an attack on them or as a slight to their character. It is these audiences – the ones who perceive the message as adversarial in some way – that are likely to react negatively to such a message. This possibility points to a set of variables that could moderate the relationship between the negative message frame and the resulting behavior, or behavioral intention.

The first proposed moderator is *past behavior*. Research on cognitive dissonance (Festinger, 1957; Albarracín, D., Cohen, J., & Kumkale, G., 2003), psychological reactance (Brehm, 1966; Bensley, L. & Wu, R., 1991) and the importance of issue relevance to subjects' perceptions of risk (Lieberman & Chaiken, 1992) all suggest that people who are highly invested in an idea will resist attacks against it. These lines thus provide a basis for predicting that individuals who have consumed alcohol in the past, and who admit to heavy drinking, will have a different interpretation of and reaction to messages designed to curb binge drinking than those who have not consumed alcohol and are not heavy drinkers. Any one of these mechanisms could cause those who perceive themselves as heavy drinkers to react negatively to messages that criticize heavy drinking (and thus heavy drinkers).

The second proposed moderator is *self-esteem*. Research on self-esteem and health issues indicates that people with high self-esteem are less likely to acknowledge the risks associated with their negative behaviors (Gerrard, Gibbons, Reis-Bergan, &

Russell, 2000), and less likely to see themselves as vulnerable to the risks associated with those behaviors (Smith, Gerrard, & Gibbons, 1997; Weinstein & Klein, 1995). Once again, the failure of high self-esteem individuals to acknowledge the risks associated with drinking behavior may cause an increase in intentions to drink in the future. Moreover, those with high self-esteem might be particularly invested in protecting a positive identity and so they might be the most likely to defend their past actions against criticisms (Taylor & Brown, 1988). Combined, these lines of theory and research suggest that self-esteem may influence the way a negatively framed health message is received. In particular, heavy drinkers with high self-esteem might be especially likely to reject health communications when they are framed to promote a negative image of drinkers.

In summary, research and theory suggests that negative message frames might backfire among individuals who have engaged in regular and heavy drinking in the past, particularly if they have high self-esteem. It is important to note, however, that negative message frames do have their uses and can be more motivating than positively-framed messages in many instances. I turn now to these instances to provide a richer understanding of the decisions facing health professionals when they are trying to choose how to best frame interventions to reduce binge drinking

The Case for Going Negative

Although some researchers have found that communications with targeted audiences should remain positive to be convincing (Millar & Millar, 2000; Schneider, Salovey, Pallonen, Mundorf, Smith, et al., 2001), others have suggested that a negative

message can be effective (Rothman & Salovey, 1997; Block & Keller, 1995). The question as to when certain messages are more effective than others may have been partially answered by researchers who have determined that the relative effectiveness of framed messages is dependent upon the broader way people think about the specific behavior being promoted, and the societal practices and personal experiences that can shape perceptions of a particular behavior (Rothman & Salovey, 1997). For example, it is likely that heavy drinkers will perceive drinking and drinking-relevant messages very differently than non- or light drinkers because of their experiences and social circles.

Research has shown that behavioral decisions about other socially-relevant issues are more influenced by a negative image or message (Blanton, VandenEijnden, Buunk, Gibbons, Gerrard, & Bakker, 2001). In fact, Blanton et al. showed that the decision to use a condom or not was influenced by social images of the people who fail to use condoms more so than by images of people who do use condoms, and that health messages emphasizing the negative consequences of failing to use condoms ultimately decreased willingness to have unsafe sex. Others have indicated that instilling negative images of people who engage in an explicit risk behavior can be influential when communicating about a health-related issue (Gerrard, Gibbons, Reis-Bergan, Trudeau, & Buunk, 2002). Specifically, Gerrard and colleagues found that unhealthy images associated with drinking were more negative than non-drinking images – even among drinkers. They also established that healthy, non-drinking images were most likely to represent goal states for both drinkers and non-drinkers. Finally, they determined that, when faced with the opportunity to drink, adolescents thought about the positive social

consequences associated with non-drinkers and that this consideration led to lower drinking rates.

Another issue that points to the effectiveness of a negative frame is the negativity bias. Research on this bias in decision-making has found that negative information has a greater impact on judgment than equivalent positive information (Fiske, 1980; Slovic & Lichtenstein, 1968). Furthermore, researchers have suggested that this finding indicates that loss messages, or negative messages, may be weighted more heavily than gain messages, or positive messages, because negative information may be more salient to people (Meyerowitz & Chaiken, 1987).

In summary, there is strong evidence to suggest that negative message frames often will be more effective than positive message frames at reducing college binge drinking. Nevertheless, I propose that these frames can be less effective and actually backfire for certain individuals. I propose that it will be counterproductive using negative message frames when targeting populations of heavy drinkers, particularly if they have high self-esteem. I now discuss the influences of past behavior and self-esteem and describe how they might alter the effectiveness of negative messages.

Past Behavior: Experience Changes the Picture

Research on *cognitive dissonance* suggests that behavior that leads to aversive consequences can cause dissonance arousal if personal responsibility for the action is taken and the consequences are foreseeable (Cooper & Fazio, 1984). This research indicates that when the behavior and related attitudes are central to the belief system and

self-identity, attitude change as a method of dissonance reduction is no longer available and an attempt to reaffirm the initial attitude is likely.

This theory thus offers a framework for predicting the influence of negative frames on subsequent behavior. It seems likely that individuals who drink alcohol realize that they may be viewed negatively by some and, in this sense, criticism of their act is foreseeable. A negatively framed message thus confronts the drinker with an “aversive consequence” that he can anticipate. According to Cooper and Fazio (1984), dissonance is aroused when an individual confronts an aversive consequence that is a foreseeable result of a previous action. Once this dissonance is aroused, a possible result is a bolstering of attitudes about the behavior. This suggests that dissonance could be reduced through more positive attitudes towards drinking and an increased intent to drink alcohol. An example of this reaction is highlighted in research showing that individuals who have previously tried a product and then received an abstinence-promoting preventive message actually increased their intentions to use the product in the future (Albarracín, Cohen, & Kumkale, 2003).

Another related theory is the theory of *psychological reactance*. Brehm (1966) has proposed that people are motivated to restore personal freedoms that have been threatened or eliminated, and that any event that increases the perceived difficulty of achieving a desired outcome threatens the exercise of freedom. Furthermore, he has suggested that the arousal of reactance is directly related to the degree to which people believe they have a specific freedom. Finally, it is indicated that the greater the

importance of the freedom that is threatened, the greater the amount of reactance aroused by a threat – even if the threat is merely implied.

Research in support of this theory has shown that forewarning regarding the persuasive intent of a communication results in less overall persuasion, as well as a reduction in favorable thoughts regarding the message (Petty & Cacioppo, 1979). Other research has shown that predicting behavior can be perceived as a threat to behavioral freedom and result in the arousal of reactance followed by a behavior opposite of that which was predicted (Hannah, Hannah, & Wattie, 1975), and that limiting freedoms through a ban on the use of certain products (i.e. phosphate detergents) results in an increased positive attitude about and appeal for the banned products (Mazis, Settle, & Leslie, 1973).

It seems reasonable that people who have freely chosen to drink in the past could interpret a negatively framed message as a threat to their freedom to continue drinking. According to the theory, this will result in a motivation to restore that freedom. One way to do this could include an increase in heavy drinking behavior (which might be detected in a study as an increase in behavioral intentions). Consistent with this interpretation, research on emotional reactance and alcohol consumption indicates that a high-threat message promoting drinking abstinence results in negative ratings of the abstinence messages, as well as higher alcohol consumption. This result is particularly evident among heavy drinkers (Bensley & Wu, 1991).

Finally, it has been suggested that high-relevance subjects (e.g., heavy drinkers) are less likely to believe in any risks associated with their risky behavior, regardless of

the message they receive about the behavior (Lieberman & Chaiken, 1992). Therefore, it would seem that failure to see the risk associated with a behavior could lead to less openness to the underlying message that excessive drinking is harmful and result in an effort to prove that excessive drinking is not a problem. These lines of research, in addition to some degree of intuition, support the idea that past behavior will act as a moderator.

Self-Esteem: More Is Not Always Better

The other proposed moderator in the relationship between message and intention is self-esteem because of its possible influence on how the message is received. Some research suggests that high self-esteem is actually beneficial to one's health. For example, high self-esteem has been linked to exercise frequency (Varnado-Sullivan, Horton, & Savoy, 2006) and increased use of condoms in AIDS-prone areas (Bryan, Kagee, & Broaddus, 2006). Other research suggests that low self-esteem can be damaging to one's health. In fact, it has been shown that body image and sexual problems have been associated with low self-esteem in young women with breast cancer (Fobair, Stewart, Chang, D'Onofrio, Banks, & Bloom, 2006).

Despite this research, it is possible that high self-esteem can be harmful in some cases. As a matter of fact, research has shown that high self-esteem individuals who engage in risk behaviors, such as drinking, use self-serving cognitions to protect themselves from acknowledging any possible negative consequences of their actions (Gerrard, Gibbons, Reis-Bergan & Russell, 2000). According to Gerrard et al., some of these self-serving cognitions include minimizing estimates of personal risk,

overestimating the prevalence of risk behavior among peers and altering perceptions of others' reactions to the risk behavior.

It has also been suggested that self-esteem moderates the influence of health materials on perceptions of vulnerability (Smith, Gerrard, & Gibbons, 1997), and that the tendency to believe that one's risk is less than that of others reduces interest in health-protective behaviors (Weinstein & Klein, 1995). Once again, refusal to acknowledge the risk in a behavior is unlikely to lead to heeding a message to change that behavior and could contribute to an increase the behavior as a challenge to the message.

It is important to note that the above findings do not necessarily suggest that self-esteem will result in a rejection of negative frames for all individuals. Rather, self-esteem appears to be a factor to the extent that a person might feel personally threatened by the content of a negatively framed message. This suggests that self-esteem will act as a second-order moderator of message framing, such that higher self-esteem undermines the effectiveness of negative message frames, particularly among individuals with a history of heavy drinking. Research on cognitive dissonance and self-esteem supports this idea. In fact, results show that once dissonance is aroused in a way that threatens self-esteem, reactions among those with high self-esteem will be stronger and more defensive than reactions among those with low or moderate self-esteem (Gibbons, Eggleston, & Benthin, 1997).

In summary, the literature suggests that high self-esteem individuals who classify themselves as heavy drinkers will see the highest increase in intentions to consume

alcohol after receiving a negatively framed message designed to reduce alcohol consumption.

STUDY 1

This study was designed to test if past behavior moderates the effect of message framing on behavioral intention, however, it has been suggested that changing behavioral intention may not always lead to behavior change (Webb, T.L., & Sheeran, P., 2006). Admittedly, tracking actual behavior change would provide a clearer picture of the effects of social marketing messages, but the goal of this project was to understand how individuals process and respond to targeted health messages using intentions as a proximal determinant of behavior.

It was predicted that participants with a past that included heavy drinking would have a more negative reaction (i.e., increased behavioral intention) to a negatively framed message about heavy drinking than would heavy-drinking participants who received either a positively-framed message or no message. Self-esteem was not examined in this study, but it was hoped that documentation of an effect of past behavior would provide a basis for predicting a higher-order interaction between past behavior and self-esteem.

Participants and Design

A total of 212 undergraduate students (135 men and 77 women) from Texas A&M University participated for research credit in an introductory psychology class. Participants were randomly assigned to one of three experimental conditions: negative message frame, positive message frame, and no message/control. Past behavior with alcohol was treated as the focal moderator to determine whether it would alter

participant reactions to the different messages. Behavioral intention to drink alcohol in the future served as the dependent variable.

Procedure

The study was conducted with students in groups of 10 to 35. Participants completed questionnaires to assess past behavior and related variables; then they read mock health materials (in the positive frame and negative frame experimental conditions) and completed a final questionnaire to assess their response to the materials, as well as their willingness and intentions to drink in the future. Participants in the control condition filled out the questionnaires to assess past behavior and related variables, then immediately completed another questionnaire to assess their willingness and intentions to drink in the future. Once subjects completed the surveys, they received debriefing information. (See Appendix A for key questions in the questionnaire.)

Focal Variables

The primary predictor variable was message framing and the moderator variable of interest was past behavior. The primary dependent variable of interest was drinking intentions.

Message Framing

Those in the negative and positive message conditions were asked to read mock health materials designed to decrease heavy drinking. The first page of the materials provided information about the drinking norms on campus and suggested that there is a misperception among college students about how much and how often their peers actually drink alcohol. (A sample of text from the materials follows.) The second page

reported results of college surveys that showed that the majority of college students drink in moderation or abstain from drinking altogether, and that these same students approve of restrained drinking and disapprove of heavy drinking. These messages were framed either positively or negatively depending on the condition. Participants in the control condition read no message.

Text in the negatively framed condition included such information as:

Data collected at Texas A&M shows that the typical student does not approve of heavy drinking... On average, the typical A&M student clearly shows a more negative attitude than a positive attitude towards heavy drinking.

Most A&M students mistakenly think that the typical A&M student approved of heavy drinking when this is not the case. This type of misperception can lead to a case of pluralistic ignorance. With college drinking pluralistic ignorance occurs when most students disapprove of drinking but think their peers approve of drinking. Current data suggests that A&M has a high degree of pluralistic ignorance with respect to college drinking.

In contrast, text in the positively framed condition included such information as:

Data collected at Texas A&M shows that the typical student has a high opinion of both healthy drinkers (students who drink less than two drinks in a single sitting) and abstainers (students who refrain from drinking altogether). Both groups of “restrained drinkers” are viewed favorably by A&M students... The average view is to approve of students who refrain from heavy drinking.

Most A&M students mistakenly think that the typical A&M student approved of heavy drinking when this is not the case. This type of misperception can lead to a case of pluralistic ignorance. With college drinking pluralistic ignorance occurs when most students disapprove of drinking but think their peers approve of drinking. Current data suggests that A&M has a high degree of pluralistic ignorance with respect to college drinking.

It should be noted that the positively and negatively framed messages are not necessarily equal in content. Because alcohol consumption is a continuous variable, it is difficult to present an equivalent argument in both a positive and negative frame. However, the focus of this intervention was to contrast the social approval of healthy habits with that of unhealthy ones and every attempt was made to deliver the messages equably.

Past Behavior

Fifteen questions assessed past behavior with alcohol. Among other things, these questions asked how many nights per week participants drank alcohol (drinking frequency), how many nights participants consumed more than four alcoholic drinks (frequency of extreme drinking), and so on. Participants also compared their own drinking behavior with that of other students at Texas A&M. (Cronbach's $\alpha = .87$)

The main analysis was run using drinking frequency as the primary variable for past behavior because it showed identical results to those using the variables associated with extreme or "binge" drinking. Furthermore, the number of nights per week that participants consumed alcohol (or drinking frequency) provided a meaningful metric of

past alcohol use. The results from analyses using variables comparing participants to other students at Texas A&M were not reported because they did not reach significance.

Intentions

After reading the materials, participants in the negative and positive message conditions were asked to complete a final questionnaire that evaluated the health materials they read and reported their expectations, willingness and intentions in relation to their drinking in the future. Participants in the control condition simply reported their expectations, willingness and intentions to drink alcohol in the future. The primary analyses reported here focus on intention as the outcome (Cronbach's $\alpha = .89$), though results do not differ in a consequential manner if willingness or expectation are treated as the outcome variables.

Ancillary Variables

A number of other variables were measured to provide some sense of the primary determinants of alcohol use and to act as covariates in the primary analyses. One key set of variables included *attitudes and expectancies*. Prior to the manipulation participants were asked about their attitudes toward alcohol consumption, as well as their expectations about the effect drinking alcohol may have on them and their personalities. (Cronbach's $\alpha = .86$) Another broad class of variables included focused on *individual differences*. Among other questionnaires, subjects completed measures on impulsivity (Dickman, 1990), religiosity (Hoge, 1972), regulatory focus (Lockwood, Jordan & Kunda, 2002), and a measure of rebelliousness created for this study.

Results

Descriptive Statistics

The mean age of participants was 19 years old ($M = 19.6$, $SD = 2.39$), and on average they consumed alcohol once or twice a week ($M = 1.57$, $SD = 1.49$). They averaged approximately five drinks per night when drinking ($M = 5.05$, $SD = 3.32$) but reported drinking four or more drinks per sitting slightly more than one night per week ($M = 1.11$, $SD = 1.25$). It thus seems that the majority of those consuming alcohol drank to the point of intoxication most of the time. There was no significant difference in the drinking rates for males as compared with that of females, $t(212) = 1.09$, $p > .27$, but drinking rates were correlated with age, $r(200) = .24$, $p < .001$.

Main Analysis – Framing Effects

The primary prediction was that past behavior would moderate the relationship between message frame and behavioral intentions to consume alcohol in the future, such that those with a past of heavy drinking behavior would increase their behavioral intention to drink alcohol in the future after reading a negatively framed intervention. To aid in the analysis, dummy codes were created to compare each of the framing conditions (positive and negative) against the control condition.

A hierarchical regression was run to determine whether behavioral intention could be predicted by past behavior and the two codes for message framing. The first step of this analysis showed that there was a significant main effect for drinking frequency on behavioral intent to drink alcohol in the future. In fact, the unstandardized regression coefficient indicated that, for every additional night of alcohol consumption,

drinking intentions increased by $B = 1.08$ units ($p < .001$). However, the results of the two dummy codes indicated no main effects for either the positive or negative message frames. In other words, there was no significant benefit to either a positive or negative message frame, when these conditions were compared to the control condition of no message. These results are shown in Step 1 of Table 1.

Table 1

Intentions to Drink Alcohol in the Future as Predicted by Past Behavior and Message Frame in Study 1

Model		B	Beta	t	Sig.
Step 1	Constant	-1.940		-8.48	.000
	Drinking Frequency	1.078	0.717	14.51	.000
	Positive Frame	0.192	0.041	0.71	.480
	Negative Frame	-0.037	-0.008	-0.14	.892
Step 2	Constant	-1.480		-5.03	.000
	Drinking Frequency	0.789	0.525	5.67	.000
	Positive Frame	-0.317	-0.068	-0.81	.421
	Negative Frame	-0.838	-0.177	-2.08	.039
	Positive Frame X Frequency	0.319	0.177	1.78	.077
	Negative Frame X Frequency	0.513	0.249	2.66	.009

B = unstandardized regression coefficients

Beta = standardized regression coefficients

Step 1: Regression weights predicting intention to drink alcohol in the future from past drinking frequency (based on number of nights per week that alcohol was consumed) and message frame (positive frame compared to control and negative frame compared to control).

Step 2: Regression weights predicting intention to drink alcohol in the future from past drinking frequency (based on number of nights per week that alcohol was consumed), message frame (positive frame compared to control and negative frame compared to control) and message frame x frequency interaction.

The lack of main effects of the two framing conditions would seem to suggest that neither of the interventions was effective at influencing drinking intentions, but a different story emerged when the interaction effects were examined. The second step of the hierarchical regression was run to determine whether the interaction between message frame and past behavior (Frame x Behavior) would predict behavioral intention to drink alcohol in the future. Results of this analysis showed a significant interaction between the negative message frame and past behavior, $B = .51$, $t(201) = 2.66$, $p < .01$. This outcome indicated that the negative frame condition became less effective (compared to the control), as past drinking behavior increased. Specifically, for every additional night of drinking alcohol, the negative message frame *increased* intentions to consume alcohol in the future by $B = .51$ units, relative to the control condition.

The results also suggested a non-significant but marginal interaction between the positive message frame and past behavior, $B = .319$, $t(201) = 1.78$, $p < .08$. This marginally significant effect was in the same direction as the significant effect of the negative frame. Thus, for every additional night of drinking alcohol, the positive message frame tended to increase intentions to consume alcohol in the future by $B = .32$ units, relative to the control condition. These results suggest that there may be some negative consequences to communicating any kind of message about drinking to a heavy-drinking audience.¹ These results are shown in Step 2 of Table 1.

Furthermore, as seen in Step 2 of Table 1, results showed a simple main effect for condition that suggested a significant benefit of the negatively framed message among non-drinkers, $B = -.84$, $t(196) = -2.08$, $p < .04$. In other words, the negative

message frame decreased behavioral intentions to drink in the future *among non-drinkers* by .84 units, relative to the control condition, and this result was significant. However, this benefit was not significant for the positively-framed message among this same group, though it did trend in the same direction.

A much different pattern of simple main effects was seen among heavy drinkers. To examine these effects, the expected values of the two framing manipulations were estimated using the regression equation from Step 2 of the analysis for participants who consumed alcohol an average of 1.5 times per week (Light Drinkers), an average of 3 times per week (Moderate Drinkers) and an average of 4 or more times per week (Heavy Drinkers). Among those individuals who consumed alcohol four or more times a week, a negative frame did not promote healthier intentions. Rather, the negative frame actually increased intention to drink alcohol by $B = 1.50$ units relative to the control condition, $t(196) = 2.35, p < .02$. At this level of drinking, the effect of the positive frame was also positive, $B = 1.13$, but it did not reach conventional levels of significance, $t(196) = 1.92, p < .06$. These results are shown in Figure 1.

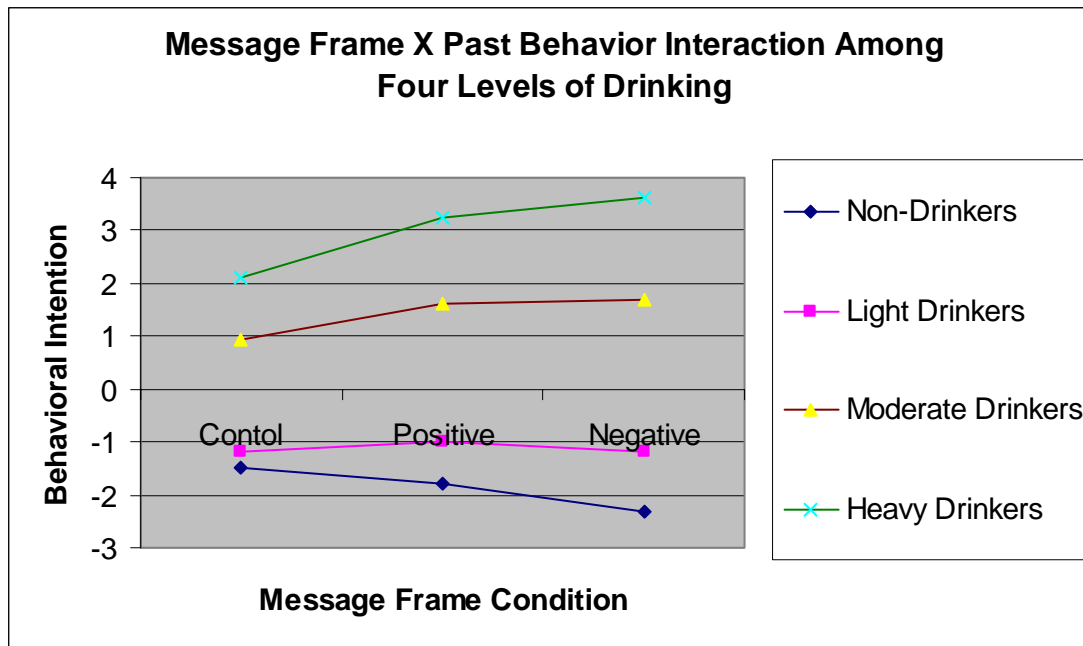


Figure 1

Study 1: Message Frame X Past Behavior Interaction Among Four Levels of Drinking. Non-Drinkers do not consume alcohol. Light Drinkers consume alcohol an average of 1.5 times per week. Moderate Drinkers consume alcohol an average of 3 times per week. Heavy Drinkers consume alcohol an average of 4 or more times per week.

In summary, results suggested that the negative frame was more effective than a no-message control condition at reducing the intention to engage in unhealthy drinking, but only among individuals with little or no past history of drinking. However, this benefit of a negative message frame was off-set by the fact that it “backfired” among those with a history of heavy drinking. For these individuals, the negative frame increased the intention to engage in heavy drinking when compared to a no-message control condition. Similar trends were found in the way that the positive message frame influenced participants, though the effects were less pronounced and fell below conventional levels of significance.

The moderating effect of past behavior on message framing is shown in Figure 1. This graph charts the expected values for intention for those who do not drink alcohol, those who consume alcohol an average of 1.5 times per week, those who consume alcohol an average of 3 times per week, and those who consume alcohol an average of 4 or more times per week.

Robustness Analysis

The above analyses suggest that past behavior is a primary determinant of how students react to negatively framed messages (and, to a lesser extent, positively-framed messages). It is possible, however, that past behavior is confounded with a more proximate moderator of message frame and that this “third variable confound” is responsible for the observed effects. Analyses were thus conducted to determine if the effects of past behavior were robust or if they could be attributed to another variable.

As a first step, zero-order correlations between past behavior and a wide range of other variables was examined, including attitudes about alcohol, alcohol expectancies, social norms, gender and age. These results showed that past behavior was correlated with attitudes about alcohol, $r(203) = .55, p < .001$, and with positive drinking expectancies, $r(204) = .28, p < .001$, as well as with social norms, $r(200) = .66, p < .001$ and age, $r(200) = .24, p < .001$. Gender and past behavior were uncorrelated. Although four of the five correlations were significant, positive attitudes about alcohol was the only variable that predicted future drinking intentions over and above past behavior, $B = .37, t(197) = 6.78, p < .001$, while positive drinking expectancies, social norms and age failed to significantly predict future drinking intentions.

These effects suggested that the interactions between past behavior and experimental condition might be due to the effects of positive attitudes about alcohol. To investigate this possibility, attitudes about alcohol was included as a covariate in the primary analyses and the interaction between negative frame and past behavior remained significant. Moreover, when past behavior was replaced in the hierarchical regression, the interaction between message frame and attitudes about alcohol (Negative Frame x Attitude) was not a significant predictor of behavioral intentions to drink alcohol in the future. These findings suggest that the influence of past behavior cannot be attributed to the effects of attitudes on negative frame.

Despite the fact that the other variables correlated with past behavior (alcohol expectancies, social norms and age) did not predict future behavioral intentions over and above past behavior, they also were included as covariates in the primary analyses and

the interaction between negative frame and past behavior remained significant for all of them except age, which reduced the significance to marginal ($p < .07$). However, when age was replaced in the hierarchical regression, the interaction between message frame and age (Negative Frame x Age) was not a significant predictor of behavioral intentions to drink alcohol in the future. These findings suggest that the influence of past behavior cannot be attributed to age on message frame.

Discussion

Summary

Results from Study 1 provided evidence that past behavior moderates the relationship between message frame and future behavioral intentions. The evidence was most clear among heavy drinkers (people who drink on average four or more times a week), in that higher levels of past drinking were associated with greater rejection of the negatively framed message (as measured by intentions to drink alcohol in the future). However, the negative frame did not always produce this type of backlash effect. In fact, the negative message was effective at reducing future behavioral intentions (relative to the control group), among non-drinkers and very light drinkers (people who drink on average one or fewer times per week). Therefore, it seems reasonable to characterize the negative frame as a “double-edged sword” in health communication; sometimes it is an effective tool at reducing unhealthy drinking intentions and other times it increases these same intentions.

The effects for positive frames were similar in direction, though the patterns were less pronounced. Findings thus provided the strongest evidence that negatively framed

communication promoted healthy drinking behavior among some individuals (i.e., light drinkers) and unhealthy drinking behavior among other individuals (i.e., heavy drinkers).

Implications

Although Study 1 suggested an important moderator of reactions to health messages, past behavior, it was not as informative in pointing to the reason why this behavior would be influence reactions to health messages. Consistent with the earlier discussion, it was hypothesized that these differences reflect the differential esteem threat experienced by heavy versus light drinkers who are targeted by health promotion materials. As noted earlier, self-esteem appears to influence the way people process health messages, in that those with high self-esteem seem not to acknowledge the possible negative health consequences for their actions (Gerrard, Gibbons, Reis-Bergan & Russell, 2000) and underestimate their vulnerability to the health concerns raised in the message (Smith, Gerrard, & Gibbons, 1997). The general belief in one's own health might cause people to actively resist communications that directly challenge these perceptions.

In light of this work, it was hypothesized that individuals with high self-esteem will resist negatively framed messages, if these messages indirectly impugn their identity. Thus, people who have considerable experience drinking alcohol should be most prone to resisting influence if they have high self-esteem. Consistent with this view, research suggests that dissonance arousal results in stronger defensive reactions among those with high rather than low self-esteem (Gibbons, Eggleston & Benthin, 1997). Moreover, people with high self-esteem appear quite adept at deflecting

criticisms of their actions and actively resist threats to their sense of self (Baumeister, 1993). Therefore, people who are heavy users of alcohol may not only perceive messages about reducing alcohol consumption to be direct attack on their character but they might react against the message in order to maintain positive self-views.

If this characterization is correct, then the moderating role of past behavior that was observed in the Study 1 should be especially strong among individuals with high self-esteem but diminished or completely absent among those with low self-esteem. Study 2 tested this prediction.

STUDY 2

This study was designed to test a self-esteem maintenance account of the interaction between past behavior and negative message frame. Specifically, this project tested for a hypothesized three-way interaction between past behavior, message frame and self-esteem (Past Behavior x Message Frame x Self-Esteem). It was predicted that both past behavior and self-esteem would moderate the relationship between message frame and future intentions to drink alcohol, such that those with a heavy drinking past and high self-esteem would be at the highest risk of backlash effects when faced with a negative message. Furthermore, it was predicted that this backlash effect would then result in increased intentions to drink alcohol in the future. Once again, behavioral intention was the dependent variable because intention is a proximal determinant of future behavior.

The study also attempted to determine whether participant reactions were mediated by variables that are consistent with the supporting theories and could contribute to the backlash effect. For example, because psychological reactance hinges on threats to freedom, questions were asked about participants' perceptions of threat based on the intervention and to what extent they believe the communication is intended to control their behavior. In terms of cognitive dissonance, it was suggested that the interpretation by participants of the intervention as aversive might heighten a dissonance response, and questions were added to the survey to assess the level at which participants find the intervention communication aversive. Finally, because there is evidence that high-relevance participants are less likely to assess their behavior as risky, a question

was added to determine whether participants agreed that there are negative social consequences of drinking alcohol. These constructs have not been measured in this way in the past and it is possible that it will be difficult to uncover evidence of mediation at this level. However, the questions were included to capture as much information as possible from participants who are engaged in the survey.

The goals of this study were as follows:

- To replicate the findings from the Study 1, which suggested that past behavior moderates the relationship between message frame and future behavioral intentions.
- To test self-esteem as a potential moderator of the relationship between message frame and future behavioral intentions.
- To re-test for age as a predictor of a backlash reaction (increased behavioral intention as a result of the interaction between past behavior and the negative message frame) with more power.
- To test for mediation in an attempt to determine the mechanisms through which the backlash reaction might occur.

Participants and Design

Participants were recruited from the subject pool of undergraduate Introductory Psychology students at Texas A&M University. A total of 490 students (170 men and 320 women) participated for research credit. Participants were randomly assigned to one of two experimental conditions: negative message frame and no message/control. Past behavior and self-esteem were treated as focal moderators to determine whether they would alter participant reactions to the negatively framed message.

Procedure

Study 2 followed a similar procedure to Study 1. As before, participants were tested in groups of 20 to 40. They first responded to a series of questionnaires about their own past behavior, their perceptions of alcohol use on campus and a number of possible moderator variables such as self-esteem, regulatory focus and sensation seeking. After providing responses to these questionnaires, participants were asked to read mock health materials (in the negative frame condition) and complete a final questionnaire to assess their response to the materials, as well as their willingness and intentions to drink in the future. Once subjects completed the surveys, they received debriefing information. (See Appendix B for questionnaire.)

Primary Modifications

Questionnaires

Self-Esteem. The Rosenberg Self-Esteem Inventory (1965) was included to measure self-esteem. (Cronbach's $\alpha = .87$)

Drinking Identity. Four additional questions designed to assess how strongly drinking alcohol was related to self-image and identity were also included the questionnaire for this study. (Cronbach's $\alpha = .87$)

Past Behavior. The questionnaire from the Study 1 was used in the current study but a couple of modifications were made. First, a question was been added to determine the number of alcoholic drinks consumed in a typical night of drinking. This information was added to improve the overall measure of past behavior, which included only number of nights of drinking and number of nights of extreme drinking (more than

four drinks at one sitting) for Study 1. (Cronbach's $\alpha = .85$) In this study, the main analyses were run using a past behavior variable that was created by combining drinking frequency with the variables associated with extreme or "binge" drinking because these variables showed identical results in the Study 1. (Cronbach's $\alpha = .93$)

Individual Differences and Ancillary Variables. Participants also provided responses to individual difference measures including sensation seeking (Hoyle, Stephenson, Palmgreen, Lorch & Donohew, 2002; Slater, 2003), regulatory focus (Lockwood, Jordan & Kunda, 2002; Higgins, Friedman, Harlow, Idson, Ayduk & Taylor, 2001) and the Life Orientation Scale (Scheier, Carver & Bridges, 1994).

Manipulation

The manipulation in Study 2 was identical to that used in Study 1, with the exception that the positive-frame condition was removed. Participants in the negative message condition then completed the same questionnaire that was used in the Study 1 to assess their evaluations of the materials, as well as their willingness and intentions to drink alcohol in the future. Once again, participants in the control condition simply reported their willingness and intentions to drink in the future. (Cronbach's $\alpha = .93$)

Results

Descriptive Statistics

Students involved in Study 2 were younger than those from the Study 1, but their drinking frequency was roughly the same. The mean age of participants was 18 years old ($M = 18.45$, $SD = .785$), and on average they consumed alcohol once or twice a week ($M = 1.44$, $SD = 1.21$). They averaged approximately four drinks on a typical night

when drinking ($M = 4.39$, $SD = 2.42$), and reported drinking four or more drinks per sitting about one night per week ($M = 1.03$, $SD = 1.09$). As was seen in the results of the Study 1, the majority of participants in Study 2 seem to “binge” drink almost every time they consumed alcohol. However, in this sample, drinking rates were uncorrelated with age, which may be related to the fact that there was a very slight range in age for this group.

Main Analyses – Framing Effects

One of the goals of this study was to replicate the findings from the Study 1. In other words, one of the hypotheses to be tested was that past behavior would moderate the relationship between message frame and behavioral intentions to consume alcohol in the future after reading the negatively framed intervention. A hierarchical regression was run to test this prediction and the first step of the analysis uncovered a significant main effect for past behavior. In this case, the unstandardized regression coefficient indicated that for each one-point increase in drinking behavior, intentions to drink in the future increased by $B = 1.36$ units ($p < .001$). A significant main effect for condition was also shown, such that when compared to the control condition, exposure to the negatively framed message decreased future intentions to consume alcohol by $B = -.520$ units ($p < .001$).

The second step of the hierarchical regression was run to determine whether the interaction between past behavior and message frame (Behavior x Frame) would predict behavioral intentions to drink alcohol in the future. Results of this analysis were not significant, which means there was a failure to replicate the findings from the Study 1.

Upon receiving the null results, analyses were run to determine if there were extreme outliers or other issues with the data related to the assumptions for regression but none of the results were conclusive. Figure 2 presents a scatter plot of the data showing behavioral intention by frequency of drinking in both the control and negative frame conditions.

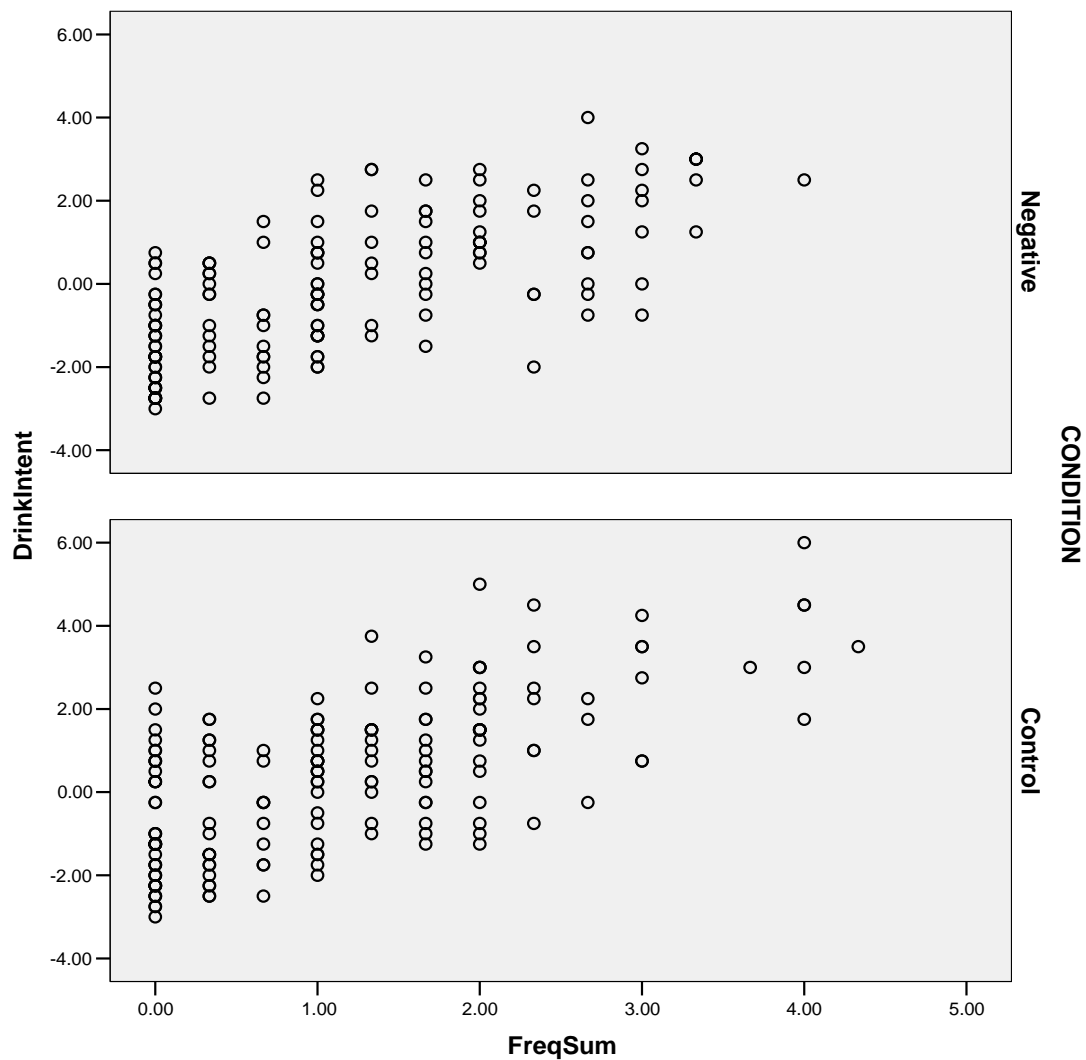


Figure 2
Scatter Plot of Sample (Study 2)

Another purpose of this study was to test a self-esteem maintenance account of the interaction between past behavior and the negative message frame. Despite the finding that the interaction between past behavior and message frame did not significantly predict future intentions to drink alcohol, a second hierarchical regression was run to determine if self-esteem influenced the relationship between past behavior and message frame to predict future intentions to drink alcohol. It was predicted that both past behavior and self-esteem would moderate the relationship between message frame and intention to drink alcohol in the future, such that those with a heavy drinking past and high self-esteem would be at the greatest risk of backlash effects when faced with a negative message. It was also predicted that this backlash effect would result in increased intentions to drink alcohol.

The first step of the hierarchical regression indicated a significant main effect of both past behavior and condition. In terms of past behavior, the unstandardized regression coefficient suggested that each one unit increase in drinking behavior was related to an increase of intention to drink in the future, $B = 1.13, p < .001$. In addition, the negative frame significantly decreased future drinking intentions, $B = -.531, p < .001$. There was no significant effect for self-esteem as a predictor of behavioral intention to drink alcohol.

The second step of the hierarchical regression was run to determine whether the interactions between past behavior and message frame (Behavior x Frame), between self-esteem and message frame (Self-Esteem x Frame) or between past behavior and

self-esteem (Behavior x Self-Esteem) would predict behavioral intentions to drink alcohol in the future. Results of this analysis were not significant.

The third step of the hierarchical regression was run to investigate the three-way interaction between past behavior, message frame and self-esteem (Behavior x Frame x Self-Esteem). Results of this analysis were marginally significant, $B = -.356, p < .07$, but in the opposite direction of the prediction. In other words, behavioral intentions to drink alcohol in the future after reading a negatively framed message actually *decreased* for individuals with a heavy drinking past and high self-esteem when compared with those who received no message. Furthermore, there were no framing effects for either condition for those with low self-esteem. When comparing the low self-esteem participants with the high self-esteem participants in the control condition, there was a significant increase in behavioral intention to drink in the future for those with high self-esteem. However, as suggested by the regression analysis, among those participants in the negatively framed message condition, those with high self-esteem decreased their intention to consume alcohol. These results are shown in Figure 3.

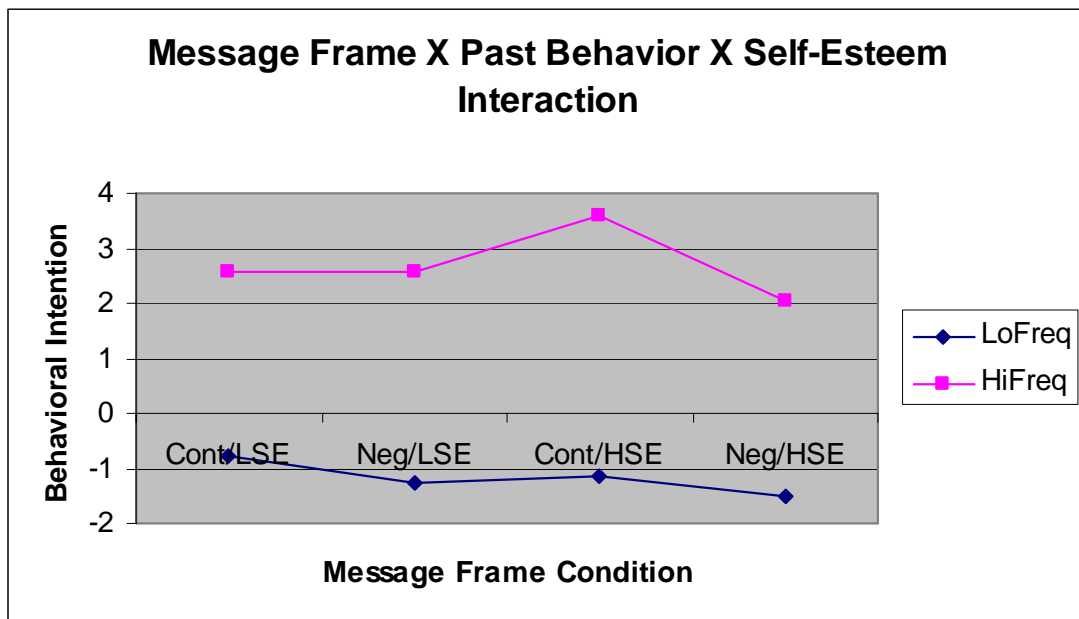


Figure 3
Study 2: Message Frame X Past Behavior X Self-Esteem Interaction.
Expected values of intentions to drink alcohol in the future for low frequency (non-drinkers) and high frequency (Frequency = $M+2SD$) drinkers using regression equation from Main Analysis of Study 2.

Ancillary Analysis

Although the results of this study suggested that self-esteem did not moderate the relationship between past behavior and drinking intentions as predicted, it is still possible that the theory was correct but that the self-esteem variable failed to measure the influence of alcohol consumption as part of the participant's identity. Therefore, additional analyses were run to test whether the extent to which alcohol was a part of the participant's identity moderated the relationship between past behavior and future intentions to consume alcohol in the predicted direction. The hypothesis for this analysis was the same as the previous one for self-esteem: both past behavior and identification with alcohol would moderate the relationship between message frame and future intentions to drink alcohol, such that those with a heavy drinking past and high alcohol identification would be at the highest risk of backlash effects when faced with a negative message. This backlash effect should then result in increased intentions to drink alcohol in the future.

The rationale for this test was that the influence of self-esteem – its ability to impact the interaction between past behavior and message frame – should in some way be related to whether self-esteem is challenged by the negative message. Those with high self-esteem and a high identification with alcohol could be more insulted by the materials. Once again, a hierarchical regression was run to determine the potential influence of alcohol identity on the interaction between past behavior and message frame and its relationship to future behavioral intentions.

The first step of the hierarchical regression indicated a significant main effect of alcohol identification, past behavior and condition. In terms of alcohol identification, the unstandardized regression coefficient suggested that each one unit increase in alcohol identity was related to an increase of intention to drink in the future, $B = .418, p < .001$. In addition, each one unit increase in past behavior led to a one unit increase in behavioral intention, $B = 1.02, p < .001$, and the negative frame significantly decreased future drinking intentions, $B = -.481, p < .001$.

The second step of the hierarchical regression was run to determine whether the interactions between past behavior and message frame (Behavior x Frame), between alcohol identification and message frame (Alcohol Identity x Frame) or between past behavior and alcohol identification (Behavior x Alcohol Identity) would predict behavioral intentions to drink alcohol in the future. Results of this analysis were not significant.

The third step of the hierarchical regression was run to investigate the three-way interaction between past behavior, message frame and alcohol identification (Behavior x Frame x Alcohol Identity). Results of this analysis were not significant.

Exploratory Analysis

Because the primary analyses did not yield any of the predicted results, a wide range of exploratory analyses were conducted to determine if particular operationalizations were obstructing the hypothesized effect. First, the analyses were re-run using alternative coding options for past behavior. Second, analyses focusing on behavioral willingness and behavioral expectation instead of behavioral intention as the

dependent variable were run to see how results might be affected. These substitutions were made based on research suggesting that willingness, expectation and intention are related but independent constructs that precede behavior (Gibbons, Gerrard, Blanton, & Russell, 1998; Venkatesh, V., Maruping, L. M., & Brown, S. A., 2006). Finally, a series of analyses were run to determine whether theorized effects were impacted by theoretically-consistent effects from the hypothesized mediators. These runs were based on a hypothesis that the effect on behavioral intention might have dissipated when participants completed the mediator questions, such that they no longer could be observed on the intention measure. None of these exploratory analyses yielded significant results.

Discussion

Despite the lack of significant results from this study, there remains evidence that support the general processes outlined in the proposed theory. In this case, the results were not significant but that may be for reasons other than a faulty theory. It is possible that the operationalizations were weak, although the majority of them were identical to those used in the Study 1.

It is also plausible that there was some other unknown, but critical difference between the sample for Study 2 and that from the Study 1. For example, the timing of data collection – the first few weeks of the Fall semester versus the last few weeks of the Spring semester – may have somehow influenced the participants and their responses. In fact, some research has shown that people are less susceptible to attitude change over time as importance of the attitude, certainty in the attitude and the amount of perceived

knowledge about the issue increase (Visser & Krosnick, 1998). This research might suggest that the heavy-drinking participants in the Study 1, who had more time over the course of the school year to cement their attitudes about drinking, would be less likely to change their drinking habits. Moreover, research by Stuart and Blanton (2003) indicates that, as people become more certain about the norms surrounding behavior, they become less open to some forms of communication. For instance, a negative frame typically focuses on and criticizes a behavior that is rare. Use of this form of communication later in the term, and with more senior students, might have been perceived differently than it was in Study 2, where students would have less confidence about campus norms and could be more open to influence.

It also is possible that the differences in the studies were attributable to some subtle difference in the experimental procedures. Although many of the same measures and manipulations were used in Study 2, some differences are worth noting. In particular, it is possible that the inclusion of the key moderator questionnaires altered results. Recall that participants in Study 2 responded to a self-esteem questionnaire and an optimism measure prior to receiving the mock health materials. It is possible that the simple act of filling out this part of the questionnaire allowed some participants to affirm positive qualities. If that was the case, this part of the procedure might have influenced the results of the study. In fact, research has shown that the simple act of completing a self-esteem inventory can provide self-affirmations for (the majority of) subjects who have positive self-views and thereby diminish the motivation to resist threats to the self (Steele, Spencer, & Lynch, 1993). It thus is possible that the inclusion of this and

related materials in the questionnaire was more reactive than intended, and that it thereby altered the influence of the experimental manipulations.

At this point, it is difficult to say why the results of the two studies varied so widely, but that does not mean the idea behind the studies is completely without merit. More research is not only necessary but supported by related work.

CONCLUSION: FUTURE DIRECTIONS

Despite the lack of results in the current study, the nature of this investigation does point to some directions that future research might take. One potential direction would be to give greater emphasis to the risks associated with heavy drinking behavior, rather than the social consequences. As mentioned previously, many researchers have found that people with high self-esteem process health messages in a way that supports or maintains their high levels of self-esteem. For example, research has shown that subjects with high self-esteem improved ratings of their personalities and their behavior after focusing on a message highlighting the risks associated with their behavior, and that this process ultimately led to less perceived vulnerability (Boney-McCoy, Gibbons & Gerrard, 1999). Other research indicates that smoking relapsers with high self-esteem experienced significantly greater decline in commitment to quitting than low self-esteem relapsers, and that there was a decline in perception of risk among the high self-esteem relapsers that was associated with maintenance of self-esteem (Gibbons, Eggleston, & Benthin, 1997). Based on this research and that cited earlier, it seems possible that a stronger emphasis on risks could have the previously hypothesized effects for people with a history of drinking and high self-esteem.

Support for this idea comes from research by Rothman and colleagues (Rothman, Haddock, & Schwartz, 2001). They found that students reported greater concern about their unhealthy behaviors and the associated risks if they were led to believe that their behavior was more risky than that of the average student. Furthermore, other research has established that people who had heightened perceptions of risk and concern

regarding their behavior increased intentions to take action to lessen their risk (Rothman, Kelly, Weinstein, & O'Leary, 1999). Therefore, it is plausible that increased focus on the risk of the behavior could influence how subjects respond to the materials.

There also is support for using the negative frame with high-risk subjects. For example, Banks et al. found that women who were 40 years of age or older and not adhering to current guidelines for obtaining mammography screening were more likely to have obtained a mammogram within 12 months after viewing a negatively framed message (Banks, Salovey, Greener, Rothman et al., 1995). In addition, it has been shown that high and moderate risk drivers found a driving skills test to be a more valuable assessment after reading a negatively framed message (Haddad & Delhomme, 2006). This research, combined with that cited in the introduction regarding the defensive reactions of people with high self-esteem, suggests that a follow-up study with a greater emphasis on risk might hold promise.

ENDNOTE

¹ Although the negative frame manipulation was a statistically significant moderator of past behavior and the positive frame manipulation was not, these two manipulations did not differ significantly from one another as moderators of past behavior.

REFERENCES

- Albarracín, D., Cohen, J.B. & Kumkale, G. (2003). When communications collide with recipients' actions: Effects of the post-message behavior on intentions to follow the message recommendation. *Personality and Social Psychology Bulletin*, 29, 834-845.
- Banks, S.M., Salovey, P., Greener, S., Rothman, A.J., Moyer, A., Beauvais, J. & Epel, E. (1995). The effects of message framing on mammography utilization. *Health Psychology*, 14(2), 178-184.
- Baumeister, R.F. (1993) (Ed.) *Self-esteem: The puzzle of low self-regard*. New York: Plenum.
- Bensley, L. S. & Wu, R. (1991). The role of psychological reactance in drinking following alcohol prevention messages. *Journal of Applied Social Psychology*, 21, 1111-1124.
- Blanton, H., Cooper, J., Skurnik, I. & Aronson, J. (1997). When bad things happen to good feedback: Exacerbating the need for self-justification with self-affirmations. *Personality and Social Psychology Bulletin*, 23(7), 684-692.
- Blanton, H., VandenEijnden, R. J., Buunk, B.P., Gibbons, F.X., Gerrard, M. & Bakker, A. (2001). Accentuate the negative: Social images in the prediction and promotion of condom use. *Journal of Applied Social Psychology*, 31, 274-295.
- Block, L.G. & Keller, P.A. (1995). When to accentuate the negative: The effects of perceived efficacy and message framing on intentions to perform a health-related behavior. *Journal of Marketing Research*, 32, 192-203.

Boney-McCoy, S., Gibbons, F.X. & Gerrard, M. (1999). Self-esteem, compensatory self-enhancement, and the consideration of health risk. *Personality and Social Psychology Bulletin*, 25, 954-965.

Brehm, J.W. (1966). *A theory of psychological reactance*. Academic Press: Oxford, England.

Bryan, A., Kagee, A. & Broaddus, M.R. (2006). Condom use among South African adolescents: Developing and testing theoretical models of intentions and behavior. *AIDS and Behavior*, 10(4), 387-397.

Cooper, J. & Fazio, R.H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol., 17, pp. 229-266). New York: Academic Press.

Dickman, S.J. (1990). Functional and dysfunctional impulsivity: Personality and cognitive correlates. *Journal of Personality and Social Psychology*, 58, 95-102.

Festinger, L. (1957). *A theory of cognitive dissonance*. Cambridge: Cambridge University Press.

Fiske, S. (1980). Attention and weight in person perception: The impact of negative and extreme behavior. *Journal of Personality and Social Psychology*, 38, 889-906.

Fobair, P., Stewart, S.L., Chang, S., D'Onofrio, C., Banks, P. & Bloom, J.R. (2006). Body image and sexual problems in young women with breast cancer. *Psycho-Oncology*, 15(7), 579-594.

Gerrard, M., Gibbons, F.X., Reis-Bergan, M. & Russell, D.W. (2000). Self-esteem, self-serving cognitions and health risk behavior. *Journal of Personality*, 68, 1177-1201.

Gerrard, M., Gibbons, F.X., Reis-Bergan, M., Trudeau, L., & Buunk, B.P. (2002). Inhibitory effects of drinker and non-drinker prototypes on adolescent alcohol consumption. *Health Psychology*, 21, 601-609.

Gibbons, F.X., Eggleston, T.J., & Benthin, A.C. (1997). Cognitive reactions to smoking relapse: The reciprocal relation between dissonance and self-esteem. *Journal of Personality and Social Psychology*, 72, 184-195.

Gibbons, F.X., Gerrard, M., Blanton, H. & Russell, D. (1998). Reasoned action and social reaction: Willingness and intention as independent predictors of health risk. *Journal of Personality and Social Psychology*, 74, 1164-1180.

Haddad, H. & Delhomme, P. (2006). Persuading young car drivers to take part in a driving skills test: The influence of regulatory fit on informational assessment value and persuasion. *Transportation Research Part F: Traffic Psychology and Behaviour*, 9, 399-411.

Hannah, T.E., Hannah, E.R., & Wattie, B. (1975). Arousal of psychological reactance as a consequence of predicting an individual's behavior. *Psychological Reports*, 37, 411-420.

Higgins, E.T., Friedman, R.S., Harlow, R.E., Idson, L.C., Ayduk, O.N. & Taylor, A. (2001). Achievement orientations from subjective histories of success: promotion pride versus prevention pride. *European Journal of Social Psychology*, 31, 3-23.

Hoge, D.R. (1972). A validated intrinsic religious motivation scale. *Journal for the Scientific Study of Religion*, 11, 369-376.

Hoyle, R.H., Stephenson, M.T., Palmgreen, P., Lorch, E.P. & Donohew, L. (2002). Reliability and validity of scores on a brief measure of sensation seeking. *Personality and Individual Differences*, 32, 401-414.

Liberman, A. & Chaiken, S. (1992). Defensive processing of personally relevant health messages. *Personality and Social Psychology Bulletin*, 18, 669-679.

Lockwood, P., Jordan, C.R., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83, 854-864.

Mazis, M.B., Settle, R.B., & Leslie, D.C. (1973). Elimination of phosphate detergents and psychological reactance. *Journal of Marketing Research*, 10, 390-395.

Meyerowitz, B.E. & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behaviors. *Journal of Personality and Social Psychology*, 52, 500-510.

Millar, M.G. & Millar, K.U. (2000). Promoting safe driving behaviors: The influences of message framing and issue involvement. *Journal of Applied Social Psychology*, 30, 853-866.

Petty, R.E. & Cacioppo, J.T. (1979). Effects of forewarning of persuasive intent and involvement on cognitive responses and persuasion. *Personality and Social Psychology Bulletin*, 5, 173-176.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rothman, A.J., Haddock, G. & Schwartz, N. (2001). "How many partners is too many?" Shaping perceptions of personal vulnerability. *Journal of Applied Social Psychology*, 31(10), 2195-2214.

Rothman, A.J., Kelly, K.M., Weinstein, N.D. & O'Leary, A. (1999). Increasing the salience of risky sexual behavior: Promoting interest in HIV-antibody testing among heterosexually active young adults. *Journal of Applied Social Psychology*, 29(3), 531-551.

Rothman, A.J. & Salovey, P. (1997). Shaping perceptions to motivate healthy behavior: The role of message framing. *Psychological Bulletin*, 121, 3-19.

Scheier, M.F., Carver, C.S. & Bridges, M.W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063-1078.

Schneider, T.R., Salovey, P., Pallonen, U., Mundorf, N., Smith, N.F. et al. (2001). Visual and auditory message framing effects on tobacco smoking. *Journal of Applied Social Psychology*, 31, 667-682.

Slater, M.D. (2003). Alienation, aggression, and sensation seeking as predictors of adolescent use of violent film, computer, and website content. *Journal of Communication*, 53, 105-121.

Slovic, P. & Lichtenstein, S. (1968). Relative importance of probabilities and payoffs in risk taking. *Journal of Experimental Psychology*, 78(3), 1-18.

Smith, G.E., Gerrard, M. & Gibbons, F.X. (1997). Self-esteem and the relation between risk behavior and perceptions of vulnerability to unplanned pregnancy in college women. *Health Psychology, 16*, 137-146.

Steele, C.M., Spencer, S.J. & Lynch, M. (1993). Self-image resilience and dissonance: The role of affirmational resources. *Journal of Personality and Social Psychology, 64*, 885-896.

Stuart, A.E. & Blanton, H. (2003). The effects of message framing on behavioral prevalence assumptions. *European Journal of Social Psychology, 33*, 93-102.

Taylor, S.E. & Brown, J.D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103*, 193-210.

Varnado-Sullivan, P.J., Horton, R. & Savoy, S. (2006). Differences for gender, weight and exercise in body image disturbance and eating disorder symptoms. *Eating and Weight Disorders, 11*(3), 118-125.

Venkatesh, V., Maruping, L.M. & Brown, S.A. (2006). Role of time in self-prediction of behavior. *Organizational Behavior and Human Decision Processes, 100*, 160-176.

Visser, P.S. & Krosnick, J.A. (1998). Development of attitude strength over the life cycle: Surge and decline. *Journal of Personality and Social Psychology, 75*, 1389-1410.

Webb, T.L. & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin, 132*(2), 249-268.

Weinstein, N.D. & Klein, W.M. (1995). Resistance of personal risk perceptions to de-biasing interventions. *Health Psychology, 14*, 132-140.

APPENDIX A – STUDY 1 QUESTIONNAIRE

Campus Alcohol Survey

In following questions, you will be asked about your perceptions and experiences with alcohol consumption at Texas A&M.

PAST BEHAVIOR

1. Put a check in the box that best represents how much you drink alcohol:
- | | | |
|---|--|---|
| 1 | | I don't drink |
| 2 | | Light drinker (I drink but I rarely drink to the point of intoxication) |
| 3 | | Moderate drinker (I drink to the point of intoxication but not regularly) |
| 4 | | Heavy drinker (I regularly drink to the point of intoxication) |

If you don't drink alcohol, skip to question 12.

-
2. How many nights a week do you drink alcohol?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
3. On a typical night when you drink, how many alcoholic drinks do you have?
- _____
4. About how many nights a week do you drink more than four alcoholic drinks in one sitting?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
5. About how many nights a week do you drink alcohol to the point of intoxication?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
-
6. How many alcoholic drinks do you have on the typical Thursday night? _____
7. How many alcoholic drinks do you have on the typical Friday night? _____
8. How many alcoholic drinks do you have on the typical Saturday night? _____
9. How many alcoholic drinks a night do you have in a typical week? _____
-

10. Over the course of a week, how much alcohol do you drink, compared to most other same-sex students at Texas A&M?

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 much quite a slightly about the slightly quite a much
 less bit less less same more bit more more

11. At a single sitting, how much alcohol do you drink, compared to most other same-sex students at Texas A&M?

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 much quite a slightly about the slightly quite a much
 less bit less less same more bit more more

ALCOHOL EXPECTANCIES

Each of the following statements discusses a possible effect that alcohol might have on you. Read the statement and rate the degree to which this is true of how you think you would feel if you were under the influence of alcohol.

1. My future would seem brighter.

0 1 2 3 4 5 6
 do not agree agree agree
 agree slightly quite a bit extremely

2. I would feel happy.

0 1 2 3 4 5 6
 do not agree agree agree
 agree slightly quite a bit extremely

3. I would feel good about myself.

0 1 2 3 4 5 6
 do not agree agree agree
 agree slightly quite a bit extremely

4. I would act sociable.

0 1 2 3 4 5 6
 do not agree agree agree
 agree slightly quite a bit extremely

5. I would feel calm.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

6. It would be easier for me to talk to people.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

7. I would be clumsy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

8. I would take risks.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

9. I would feel courageous.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

10. I would feel moody.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

11. I would feel sexy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

12. I would feel unafraid.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

13. I would feel guilty.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

14. I would be friendly.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

15. I would feel peaceful.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

16. I would enjoy sex more.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

17. I would act aggressively.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

18. My head would feel fuzzy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

19. I would feel self-critical.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

20. I would be loud, boisterous or noisy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

21. My body would feel relaxed.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

22. I would be a better lover.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

23. I would be brave and daring.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

INDIVIDUAL DIFFERENCE MEASURES

IMPULSIVITY

1. I say whatever comes into my head without thinking first.

①	②	③	④	⑤	⑥
never	sometimes		often		always

2. I enjoy working out problems slowly and carefully.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

3. I make appointments without thinking whether I will be able to keep them.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

4. I buy things without thinking about whether or not I can really afford them.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

5. I make up my mind without taking time to consider the situation from all angles.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

6. I don't spend enough time thinking over a situation before I act.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

7. I get into trouble because I don't think before I act.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

8. The plans I make don't work out because I haven't gone over them carefully enough in advance.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

9. I get involved in projects without first considering the potential problems.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

10. Before making any important decisions, I carefully weigh the pros and cons.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never sometimes often always

RELIGIOUSITY/MORALITY

The following questions pertain to your religious and beliefs and practices and sense of ethics. Rate your agreement with each item by filling in the one number that best describes you.

1. I am a religious person.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

2. I live by strict moral codes.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

3. I have a strong sense of moral obligation.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

4. My religion is an important part of who I am.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

5. My faith involves all of my life.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

6. One should seek God's guidance when making every important decision.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

7. In my life I experience the presence of the Divine.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

8. My faith sometimes restricts my actions.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

9. Nothing is as important to me as serving God as best I know how.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

10. I try hard to carry my religion over into all my other dealings in life.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

11. My religious beliefs are what really lie behind my whole approach to life.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

12. It doesn't matter so much what I believe, as long as I lead a moral life.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

13. Although I am a religious person, I refuse to let religious considerations influence my everyday affairs.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

14. Although I believe in my religion, I feel there are many more important things in life.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

CONSERVATIVISM

The following questions ask very general questions that assess your societal values. Fill in the number above the one that best describes your level of agreement.

1. The established authorities in our country are usually smarter, better informed, and more competent than others are, and the people can rely upon them.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

2. Nobody should “stick to the straight and narrow.” Instead, people should break loose and try out many different ideas and experiences.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

3. Our country will be great if we honor the ways of our forefathers and do what the authorities tell us to do.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

4. It is best to trust the judgment of the proper authorities in government and religion.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

5. There is no “ONE right way” to live life; everybody has to create their *own* way.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

6. People should pay less attention to traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

SOCIAL INTERACTIONS

The following questions assess your social interaction style. Fill in the number above the one number that best describes your level of agreement.

1. I am a rebellious person by nature.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

2. I rarely contradict others.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

3. I tend to follow the rules.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

4. I am the type of person who does whatever I feel like doing.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

5. No one tells me what to do.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

6. I am a compliant person.

①	②	③	④	⑤	⑥
not at all		slightly	quite		extremely
true		true	true		true

MOTIVATIONAL STYLE

The following items pertain to your motivational style. Please rate your agreement with each of the following.

1. In general, I am focused on preventing negative events in my life.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

2. I am anxious that I will fall short of my responsibilities and obligations.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

3. I frequently imagine how I will achieve my hopes and aspirations.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

4. I often think about the person I am afraid I might become in the future.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

5. I often think about the person I would ideally like to be in the future.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

6. I typically focus on the success I hope to achieve in the future.

⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪	⓪
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

7. I often worry that I will fail to accomplish my academic goals.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

8. I often think about how I will achieve academic success.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

9. I often imagine myself experiencing bad things that I fear might happen to me.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

10. I frequently think about how I can prevent failures in my life.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

11. I am more oriented toward preventing losses than I am toward achieving gains.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

12. My major goal in school right now is to achieve my academic ambitions.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

13. My major goal in school right now is to avoid becoming an academic failure.

-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

14. I see myself as someone who is primarily striving to reach my “ideal self” – to fulfill my hopes, wishes, and aspirations.

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

15. I see myself as someone who is primarily striving to become the self I “ought” to be – to fulfill my duties, responsibilities, and obligations.

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

16. In general, I am focused on achieving positive outcomes in my life.

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

17. I often imagine myself experiencing good things that I hope will happen to me.

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

18. Overall, I am more oriented toward achieving success than preventing failure.

-6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

DEMOGRAPHICS

Finally, we would like to know a little about you.

Age: _____

Gender: 0 Male 1 Female

Check one or more categories that describe your race or ethnicity:

- 1 ① American Indian or Alaska Native
- 2 ② Asian or Asian American
- 3 ③ Black or African American
- 4 ④ Latino or Hispanic
- 5 ⑤ Native Hawaiian or Other Pacific Islander
- 6 ⑥ White
- 1 ⑦ Other: _____

Academic year (circle one): Freshman Sophomore Junior Senior

Years attending school at A&M:

Less than ① ① ② ③ ④ ⑤ ⑥ ⑦ or more

What is your grade average at Texas A&M (check one):

- 1 _____ A
- 2 _____ A-minus
- 3 _____ B-plus
- 4 _____ B
- 5 _____ B-minus
- 6 _____ C-plus
- 7 _____ C
- 8 _____ C-minus
- 9 _____ D-plus
- 10 _____ D
- 11 _____ D-minus
- 12 _____ F

What was your grade average last semester?

- | | | |
|----|-------|---------|
| 1 | _____ | A |
| 2 | _____ | A-minus |
| 3 | _____ | B-plus |
| 4 | _____ | B |
| 5 | _____ | B-minus |
| 6 | _____ | C-plus |
| 7 | _____ | C |
| 8 | _____ | C-minus |
| 9 | _____ | D-plus |
| 10 | _____ | D |
| 11 | _____ | D-minus |
| 12 | _____ | F |

How many credit hours are you taking this semester? _____

How many hours a week (outside of class) do you spend doing homework, studying or completing class assignment?

How many hours a week (outside of class) do you spend at a job or working for an employer?

Thank you for your time.

APPENDIX B – STUDY 2 QUESTIONNAIRE

Campus Alcohol Survey

In the following questions, you will be asked about your perceptions and experiences with alcohol consumption.

1. Put a check next to the statement that best represents how much you drink alcohol:
- 1 ☐ I don't drink
- 2 ☐ Light drinker (I drink but I rarely drink to the point of intoxication)
- 3 ☐ Moderate drinker (I drink to the point of intoxication, but not regularly)
- 4 ☐ Heavy drinker (I regularly drink to the point of intoxication)

If you don't drink alcohol, skip to question 12.

2. How many nights a week do you drink alcohol?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
3. About how many nights a week do you drink more than four alcoholic drinks in one sitting?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
4. About how many nights a week do you drink alcohol to the point of intoxication?
- Less than ① ① ② ③ ④ ⑤ ⑥ ⑦
-

5. *Over the course of a week*, how much alcohol do you drink, compared to most other same-sex students at Texas A&M?

⑥ ⑤ ④ ③ ② ① 0 ① ② ③ ④ ⑤ ⑥

much quite a slightly about the slightly quite a much

less bit less less same more bit more more

6. *At a single sitting*, how much alcohol do you drink, compared to most other same-sex students at Texas A&M?

⑥ ⑤ ④ ③ ② ① 0 ① ② ③ ④ ⑤ ⑥

much quite a slightly about the slightly quite a much

less bit less less same more bit more more

For the following five questions we ask you to provide a number. We know that the correct answer may include a range but we ask you to provide the ONE number that is most representative of your habits. For example, if you typically drink between 1 and 3 cups of coffee during the day, you might report that you typically have 2 cups of coffee per day.

7. On a typical night when you drink, how many alcoholic drinks do you have?

8. How many alcoholic drinks do you have on the typical Thursday night? _____

9. How many alcoholic drinks do you have on the typical Friday night? _____

10. How many alcoholic drinks do you have on the typical Saturday night? _____

11. How many alcoholic drinks do you have in a typical week? _____

12. For me to drink alcohol on a regular basis is

-(6)	-(5)	-(4)	-(3)	-(2)	-(1)	0	1	2	3	4	5	6
extremely	quite		slightly		neutral		slightly		quite		extremely	
bad	bad		bad				good		good		good	

13. For me to drink alcohol in any given night is

-(6)	-(5)	-(4)	-(3)	-(2)	-(1)	0	1	2	3	4	5	6
extremely	quite		slightly		neutral		slightly		quite		extremely	
bad	bad		bad				good		good		good	

14. For me to drink more than four alcoholic drinks in any given night is

-(6)	-(5)	-(4)	-(3)	-(2)	-(1)	0	1	2	3	4	5	6
extremely	quite		slightly		neutral		slightly		quite		extremely	
bad	bad		bad				good		good		good	

15. For me to drink to the point of intoxication in any given night is

-(6)	-(5)	-(4)	-(3)	-(2)	-(1)	0	1	2	3	4	5	6
extremely	quite		slightly		neutral		slightly		quite		extremely	
bad	bad		bad				good		good		good	

16. Drinking alcohol is part of my personal image.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

17. Drinking alcohol is an important part of who I am.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

18. My friends and peers associate my identity with drinking alcohol.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

19. I like having my identity associated with drinking alcohol.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

Each of the following statements discusses a possible effect that alcohol might have on you. Read the statement and rate the degree to which this is true of how you think you would feel if you were under the influence of alcohol.

1. My future would seem brighter.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

2. I would feel happy.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

3. I would feel good about myself.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

4. I would act sociable.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

5. I would feel calm.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

6. It would be easier for me to talk to people.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

7. I would be clumsy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

8. I would take risks.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

9. I would feel courageous.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

10. I would feel moody.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

11. I would feel sexy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

12. I would feel unafraid.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

13. I would feel guilty.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

14. I would be friendly.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

15. I would feel peaceful.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

16. I would enjoy sex more.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

17. I would act aggressively.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

18. My head would feel fuzzy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

19. I would feel self-critical.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

20. I would be loud, boisterous or noisy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

21. My body would feel relaxed.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

22. I would be a better lover.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

23. I would be brave and daring.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

The following questions focus on attitudes and norms at Texas A&M. In the questions that follow, you will be asked to think about the norms of “typical same-sex students at A&M.” In these questions, please try to think beyond students in your peer group and think about students in general.

1. In your estimation, what percentage of students at Texas A&M falls in each of the following categories? (Make sure that the percentages add up to 100%)

Non-drinkers
 Light drinkers (drink but rarely to the point of intoxication)
 Moderate drinkers (drink to the point of intoxication, but not regularly)
 Heavy drinkers (regularly drink to the point of intoxication)

2. How many nights a week do typical students at Texas A&M drink alcohol?

Less than ① ① ② ③ ④ ⑤ ⑥ ⑦

3. About how many nights a week do typical students at Texas A&M drink at least four alcoholic drinks in one sitting?

Less than ① ① ② ③ ④ ⑤ ⑥ ⑦

4. About how many nights a week do typical students at Texas A&M drink alcohol the point of intoxication?

Less than ① ① ② ③ ④ ⑤ ⑥ ⑦

For the following five questions we ask you to provide a number. We know that the correct answer may include a range but once again we ask you to provide the ONE number that is most representative of Texas A&M students' habits.

5. On a typical night when they drink, how many alcoholic drinks do typical students at Texas A&M consume? _____
6. How many alcoholic drinks do typical students at Texas A&M drink on a Thursday night? _____
7. How many alcoholic drinks do typical students at Texas A&M drink on a Friday night? _____
8. How many alcoholic drinks do typical students at Texas A&M drink on a Saturday night? _____

9. How many alcoholic drinks do typical students at Texas A&M drink in a week?
- _____
-

10. To what extent would typical students at Texas A&M approve or disapprove of you drinking *regularly*?

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disapprove disapprove disapprove neutral approve approve
 approve
 extremely quite a bit slightly slightly quite a bit extremely

11. To what extent would typical students at Texas A&M approve or disapprove of you drinking *heavily*?

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disapprove disapprove disapprove neutral approve approve
 approve
 extremely quite a bit slightly slightly quite a bit extremely

12. To what extent would typical students at Texas A&M approve or disapprove of you regularly drinking alcohol *to the point of intoxication*?

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disapprove disapprove disapprove neutral approve approve
 approve
 extremely quite a bit slightly slightly quite a bit extremely

13. Generally speaking, how much do you care whether typical students at Texas A&M approve or disapprove of how *frequently* you drink?

① ② ③ ④ ⑤ ⑥
 not at all slightly quite extremely

14. How much do you care whether typical students at Texas A&M approve or disapprove of how *heavily* you drink?

① ② ③ ④ ⑤ ⑥
 not at all slightly quite extremely

15. How much do you care whether typical students at Texas A&M approve or disapprove of you drinking *to the point of intoxication*?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

16. How important is to you to drink alcohol at a rate that is similar to the amount that typical students at Texas A&M drink?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely
 important important important important

17. How similar are you to the typical student at Texas A&M *in terms of your alcohol consumption*?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

18. Putting aside alcohol consumption, how similar are you to the typical student at Texas A&M *in general*.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

The following items pertain to your overall personality. Please respond to the following statements using the scale shown below:

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

1. I feel that I'm a person of worth, at least on an equal plane with others.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

2. I feel that I have a number of good qualities.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

3. All in all, I am inclined to feel that I am a failure.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

4. I am able to do things as well as most other people.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

5. I feel I do not have much to be proud of.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

6. I take a positive attitude toward myself.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

7. On the whole, I am satisfied with myself.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

8. I wish I could have more respect for myself.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

9. I certainly feel useless at times.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

10. At times I think I am no good at all.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 not at all slightly quite extremely

The following items pertain to your interests and motivations. Please rate your agreement with the following items by filling in the circle that best represents your beliefs.

1. I would like to explore strange places.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

2. I get restless when I spend too much time at home.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

3. I like to do frightening things.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

4. I like wild parties.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

5. I like to do dangerous things for fun.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

6. I would like to take off on a trip with no pre-planned routed or timetables.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

7. I prefer friends who are excitingly unpredictable.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

8. I would like to try bungee jumping.

① ② ③ ④ ⑤ ⑥
not at all slightly quite extremely

9. I would love to have new and exciting experiences, even if they are illegal.

① ② ③ ④ ⑤ ⑥
 not at all slightly quite extremely

10. I like to do exciting things even if they are dangerous.

① ② ③ ④ ⑤ ⑥
 never sometimes often always

The following items pertain to your motivational style. Please rate your agreement with each of the following.

1. In general, I am focused on preventing negative events in my life.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

2. I am anxious that I will fall short of my responsibilities and obligations.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

3. I frequently imagine how I will achieve my hopes and aspirations.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

4. I often think about the person I am afraid I might become in the future.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

5. I often think about the person I would ideally like to be in the future.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

6. I typically focus on the success I hope to achieve in the future.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

7. I often worry that I will fail to accomplish my academic goals.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

8. I often think about how I will achieve academic success.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

9. I often imagine myself experiencing bad things that I fear might happen to me.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

10. I frequently think about how I can prevent failures in my life.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

11. I am more oriented toward preventing losses than I am toward achieving gains.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

12. My major goal in school right now is to achieve my academic ambitions.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

13. My major goal in school right now is to avoid becoming an academic failure.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

14. I see myself as someone who is primarily striving to reach my “ideal self” – to fulfill my hopes, wishes, and aspirations.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

15. I see myself as someone who is primarily striving to become the self I “ought” to be – to fulfill my duties, responsibilities, and obligations.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

16. In general, I am focused on achieving positive outcomes in my life.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

17. I often imagine myself experiencing good things that I hope will happen to me.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

18. Overall, I am more oriented toward achieving success than preventing failure.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓖ	Ⓗ	Ⓘ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

This set of questions asks you about specific events in your life. Please indicate your answer to each question by filling in the appropriate number.

1. Compared to most people, are you unable to get what you want out of life?

① never ② rarely ③ sometimes ④ often

2. Growing up, would you ever “cross the line” by doing things that your parents would not tolerate?

① never ② rarely ③ sometimes ④ often

3. How often have you accomplished things that got you “psyched” to work even harder?

① never ② rarely ③ sometimes ④ often

4. Did you get on your parents’ nerves often when you were growing up?

① never ② rarely ③ sometimes ④ often

5. How often did you obey rules and regulations that were established by your parents?

① never ② rarely ③ sometimes ④ often

6. Growing up, did you ever act in ways that your parents through were objectionable?

① never ② rarely ③ sometimes ④ often

7. Do you do well at different things you try?

① never ② rarely ③ sometimes ④ often

8. Has not being careful enough gotten you into trouble?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never rarely sometimes often

9. When it comes to achieving things that are important to you, do you find that you don't perform as well as you would like to?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never rarely sometimes often

10. Do you feel like you have made progress toward being successful in your life?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never rarely sometimes often

11. Have you found very few hobbies or activities that capture your interest or motivate you to put effort into them?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 never rarely sometimes often

The following questions address your general attitude about and expectations for your life. Please indicate the extent of your agreement with each statement by filling in the appropriate number.

1. In uncertain times, I usually expect the best.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

2. It's easy for me to relax.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

3. If something can go wrong for me, it will.

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 do not agree agree agree
 agree slightly quite a bit extremely

4. I'm always optimistic about my future.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

5. I enjoy my friends a lot.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

6. It's important for me to keep busy.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

7. I hardly ever expect things to go my way.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

8. I don't get upset too easily.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

9. I rarely count on good things happening to me.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

10. Overall, I expect more good things to happen to me than bad.

①	②	③	④	⑤	⑥
do not		agree	agree		agree
agree		slightly	quite a bit		extremely

Dependent Measures

Please fill in the circle that best describes your evaluations of the public service materials you just read:

1. Good ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 Bad
 extremelyquite slightly neutral slightly quite extremely
 2. Awful ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 Nice
 extremelyquite slightly neutral slightly quite extremely
 3. Helpful ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 Unhelpful
 extremelyquite slightly neutral slightly quite extremely
 4. Useless ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 Useful
 extremelyquite slightly neutral slightly quite extremely
 5. Negative ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 Positive
 extremelyquite slightly neutral slightly quite extremely
-

Rate your agreement or disagreement with each of the following statements.

ME1. Overall, I have a positive evaluation of the message in the materials I just read.

☐ -6 ☐ -5 ☐ -4 ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

ME2. As I was reading, I found myself rejecting a lot of what was said.

☐ -6 ☐ -5 ☐ -4 ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

ME3. I endorse most of what was said in the material I just read.

☐ -6 ☐ -5 ☐ -4 ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

ME4. I find the conclusions in this message objectionable.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME5. I think this message was written in a way that will offend people.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME6. I think the tone of this message was effective.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME7. I think this message seemed reasonable in the way it was written.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME8. This same message could have said the same thing in a way that was much less objectionable.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME9. I think this message was too negative.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓙ	⓪	Ⓛ	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
disagree	disagree	disagree	neutral		agree		agree		agree			
extremely	quite a bit	slightly			slightly		quite a bit		extremely			

ME10. I think this message was intended to control my behavior.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME11. This message challenged my freedom to choose my own behavior.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME12. The tone of this message was controlling.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME13. Reading this message was unpleasant.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME14. I felt insulted by the content of this message.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME15. This message made me feel targeted.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

ME15. The content of this message was irritating.

Ⓔ	Ⓕ	Ⓖ	Ⓓ	Ⓒ	Ⓗ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ	Ⓖ
disagree	disagree	disagree	neutral	agree	agree	agree						
extremely	quite a bit	slightly		slightly	quite a bit	extremely						

F1. I feel _____ about drinking *regularly* this semester.

⓪	①	②	③	④	⑤	⑥
extremely	quite	slightly		slightly	quite	extremely
negative	negative	negative		positive	positive	positive

F2. I feel _____ about drinking *heavily* this semester.

⓪	①	②	③	④	⑤	⑥
extremely	quite	slightly		slightly	quite	extremely
negative	negative	negative		positive	positive	positive

F3. Drinking alcohol can have negative social consequences.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

E1. I expect to drink *regularly* this semester.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

E2. I expect to drink *heavily* this semester.

⓪	①	②	③	④	⑤	⑥
disagree	disagree	disagree	neutral	agree	agree	agree
extremely	quite a bit	slightly		slightly	quite a bit	extremely

E3. I expect to drink _____ this semester.

⓪	①	②	③	④	⑤	⑥
not		slightly		quite		extremely
at all		often		often		often

E4. I expect to drink to the point of intoxication _____ this semester.

⓪	①	②	③	④	⑤	⑥
not		slightly		quite		extremely
at all		often		often		often

I1. I intend to drink _____ this semester.

① ② ③ ④ ⑤ ⑥
 not slightly quite extremely
 at all often often often

I2. I intend to drink *regularly* this semester.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

I3. I intend to drink *heavily* this semester.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

I4. I will keep my drinking amounts as low as I can this semester.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 disagree disagree disagree neutral agree agree agree
 extremely quite a bit slightly slightly quite a bit extremely

I5. I intend to drink to the point of intoxication _____ this semester.

① ② ③ ④ ⑤ ⑥
 not slightly quite extremely
 at all often often often

W1. If I am with a group of friends that is drinking heavily, I would be _____ to drink heavily as well.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 extremely quite slightly slightly quite extremely
 unwilling unwilling unwilling willing willing willing

W2. If my friends start drinking on a week night, I would be _____ to drink on a week night.

-⑥ -⑤ -④ -③ -② -① ① ② ③ ④ ⑤ ⑥
 extremely quite slightly slightly quite extremely
 unwilling unwilling unwilling willing willing willing

W3. If my friends were drinking past the point of intoxication, I would be _____ to drink past the point of intoxication.

☐ -6 ☐ -5 ☐ -4 ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 extremely quite slightly slightly quite extremely
 unwilling unwilling unwilling willing willing willing

W4. If am at a party where most people are drinking to get drunk, I would be _____ to drink to get drunk.

☐ -6 ☐ -5 ☐ -4 ☐ -3 ☐ -2 ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
 extremely quite slightly slightly quite extremely
 unwilling unwilling unwilling willing willing willing

DEMOGRAPHICS

Finally, we would like to know a little about you.

Age: _____

Gender: ☐ Male ☐ Female

Check the category that best describes your race or ethnicity:

- 1 ☐ American Indian or Alaska Native
- 2 ☐ Asian or Asian American
- 3 ☐ Black or African American
- 4 ☐ Latino or Hispanic
- 5 ☐ Native Hawaiian or Other Pacific Islander
- 6 ☐ White
- 1 ☐ Other: _____

Academic year (circle one): Freshman Sophomore Junior Senior

Years you have attended school at Texas A&M:

Less than ☐ 1 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 or more

What is your overall grade average at Texas A&M (check one):

- 1 _____ A
- 2 _____ A-minus
- 3 _____ B-plus
- 4 _____ B
- 5 _____ B-minus
- 6 _____ C-plus
- 7 _____ C
- 8 _____ C-minus
- 9 _____ D-plus
- 10 _____ D
- 11 _____ D-minus
- 12 _____ F
- 13 _____ N/A

What was your grade average last semester?

- 1 _____ A
- 2 _____ A-minus
- 3 _____ B-plus
- 4 _____ B
- 5 _____ B-minus
- 6 _____ C-plus
- 7 _____ C
- 8 _____ C-minus
- 9 _____ D-plus
- 10 _____ D
- 11 _____ D-minus
- 12 _____ F

How many credit hours are you taking this semester? _____

How many hours a week (outside of class) do you spend doing homework, studying or completing class assignments?

How many hours a week (outside of class) do you spend at a job or working for an employer?

VITA

Name: Jill Elizabeth Burpo

Address: Department of Psychology, c/o Dr. Hart Blanton, Texas A&M University,
Mail Stop 4235, College Station, TX 77843-4235

Email Address: jburpo@gmail.com

Education: B.A., Communications, Newcomb College, 1993
M.S., Social Psychology, Texas A&M University, 2007